

UNUS #97-0029-UNI  
Case No. F7371(V)

### REMARKS

Reconsideration of the application, as amended, is respectfully requested.

The claims have been amended with respect to the various informalities noted by the Office. No amendment herein has been made to overcome cited references.

As to 35 USC §102 rejection of claim 1, the Office point to no teaching in WO 92/22581 of a protein derived from carrot. Since a reference must contain each and every limitation recited in the claim in order to support a rejection for anticipation, the rejection cannot stand. The Office cites no precedent supporting the proposition that a reference which mentions plants would anticipate a claim which recites carrots. Clearly the number of entities which fall within the category "plants" is not so limited such that it could be taken to be teaching each and every plant.

Additionally, the Office points to no teaching in WO 92/22581 of a plant which has a 36 kDa protein with anti-freeze activity.

Claim 22 has been deleted without prejudice to later presentation in a divisional application. No surrender of subject matter is intended.

Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version With Markings To Show Changes Made."

UNUS #97-0029-UNI  
Case No. F7371(V)

In view of the foregoing, it is respectfully requested that the application be allowed.

Respectfully submitted,



---

Gerard J. McGowan, Jr.  
Attorney for Applicant(s)  
Reg. No. 29,412

/gjm  
(201) 840-2297

UNUS #97-0029-UNI  
Case No. F7371(V)**VERSION WITH MARKINGS TO SHOW CHANGES MADE****In the claims:**

Please amend claims 1, 2, 4, 7, 11, 18, 23 and cancel claim 22, without prejudice or disclaimer as follows:

1. (~~Thrice Amended~~amended) Isolated polypeptides having antifreeze activity which are obtained from carrots and which have an apparent molecular weight on sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE) of 36 kDa-kDa and isoforms or derivatives thereof which still possess antifreeze activity.

2. (~~Twice~~Thrice amended) Isolated polypeptides having antifreeze activity comprising one or more fragments (A-E) of the amino acid sequence as follows:

(A) LEU-PRO-ASN-LEU-PHE-GLY-LYS (SEQ ID NO: 1)

(B) ILE-PRO-GLU-GLU-ILE-SER-ALA-LEU-LYS (SEQ ID NO: 2)

(D) SER-LEU-ARG-LEU-SER-SER-THR-SER-LEU-SER-GLY-PRO-VAL-PRO-LEU-PHE-PHE-PRO-GLN-LEU-X-LYS (SEQ ID NO: 4)

(C) LEU-THR-X-LEU-ASP-LEU-SER-PHE-ASN-LYS (SEQ ID NO: 3)

[(D) SER-LEU-ARG-LEU-SER-SER-THR-SER-LEU-SER-GLY-PRO-VAL-PRO-LEU-PHE-PHE-PRO-GLN-LEU-X-LYS (SEQ ID NO: 4)]

(E) X-X-GLY-VAL-ILE-PRO-X-GLN-LEU-SER-THR-LEU-PRO-ASN-LEU-LYS (SEQ ID NO: 5), wherein X is any amino acid.

UNUS #97-0029-UNI  
Case No. F7371(V)

4. (~~Twice-Thrice~~ amended) Isolated polypeptides having antifreeze activity having an amino acid sequence as represented in SEQ ID NO: 7 and isoforms and derivatives thereof which still possess antifreeze activity.

7. (~~Twice-Thrice~~ amended) A method of obtaining a polypeptides according to claim 2, comprising providing whereby the polypeptide is isolated from cold acclimatised carrots material containing said polypeptide, and purifying said polypeptide from the carrot material.

11. (~~Twice-Thrice~~ amended) An isolated polypeptide which ~~has antifreeze activity that is immunologically related to the polypeptide of claim 2 as determined by its cross reactivity with an antibody capable of that is specifically binding to said polypeptide~~ bound by an antibody which specifically binds to the polypeptide of claim 2.

18. (~~Twice A~~ amended) An isolated polypeptide according to that is immunologically related to the polypeptide of claim 2-11 which has anti-freeze activity as determined by its cross reactivity with an antibody capable of specifically binding said polypeptide.

21. (New) A food product comprising a polypeptide having antifreeze activity comprising one or more fragments (A-E) of the amino acid sequence as follows:

(A) LEU-PRO-ASN-LEU-PHE-GLY-LYS (SEQ ID NO: 1)

(B) ILE-PRO-GLU-GLU-ILE-SER-ALA-LEU-LYS (SEQ ID NO: 2)

(D) SER-LEU-ARG-LEU-SER-SER-THR-SER-LEU-SER-GLY-PRO-VAL-PRO-LEU-PHE-PHE-PRO-GLN-LEU-X-LYS (SEQ ID NO: 4)

UNUS #97-0029-UNI  
Case No. F7371(V)

(C) LEU-THR-X-LEU-ASP-LEU-SER-PHE-ASN-LYS (SEQ ID NO: 3)

[(D) SER-LEU-ARG-LEU-SER-SER-THR-SER-LEU-SER-GLY-PRO-VAL-PRO-LEU-PHE-PHE-  
PRO-GLN-LEU-X-LYS (SEQ ID NO: 4)]

(E) X-X-GLY-VAL-ILE-PRO-X-GLN-LEU-SER-THR-LEU-PRO-ASN-LEU-LYS (SEQ ID NO: 5), wherein the food product is a frozen confectionery product or a frozen vegetable with the proviso that the food product is not a carrot, wherein X is any amino acid.

23. (Amended) A food product comprising a polypeptide having antifreeze activity and having an amino acid sequence selected from the sequence as represented in SEQ ID No: 7 and isoforms and derivatives thereof which still possess antifreeze activity wherein the food product is a frozen confectionery product or a frozen vegetable with the proviso that the food product is not a carrot.